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Distributed Leadership: Structural Equation Model

Supphakant Prasertatana¹, Dr.Wirote Sanratana, Dr.Kanok-Orn Somprach ^c

^a Ph. D. Candidate, Khon Kaen University, Faculty of Education, Thailand^bKhon Kaen University, Faculty of Education, Thailand^cKhon Kaen University, Faculty of Education, Thailand**Abstract**

The development of the management quality focused on the distribution of administrative power and manage educational system for primary educational office area. The aim of this study was to test the distributed leadership of basic school principals in a structural equation model. Research samples were 728 principals of educational institutions the Office of the Basic Education Commission. Sample selection was made using the multi – stage sampling. Research tool was rating scale. LISREL statistics software used to analyze the data. The result indicated that the structural equation model of distributed leadership, developed by the researcher, fit well with empirical data with the following figures; chi-square value = 36.06, df=47, GFI=0.99, AGFI= 0.98, CFI=0.98, SRMR=0.00, RMSEA=0.00, CN=1451.98, LSR/SSR=1.71/-1.91. Moreover, the finding suggested that factor on trust had the highest total influence of 0.85 on distributed leadership. The factor on collaboration, had the second highest total influence of 0.47 on distributed leadership. And the factor on creativity, had the total influence and direct influencing weight of 0.01 on distributed leadership no significantly. In conclusion, the results showed that all 3 causal factors were 74% explained the distributed leadership of school basic education principals. From the result of this study, it is suggested that this structural equation model should be the guidance for the development of the school staffs.

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Keywords: Distributed Leadership, Structural Equation Model**1. Principles and Rationale**

During the age of rapid changes in globalization world, it reflects in social, economy, education, and technology concerning changes in the context of education management in Thailand. This is considered as age of rapid growth in technology, or so-called, online social network, and web 2.0 technologies. Thailand after the first education reform results in failures in many aspects, for instance, education management quality, teacher development, and curriculum development focusing especially on quality of students. Education organization management needs to be adjusted in order to fit with all changes. Administrators in this new age should be the ones who have high potential in administration and unlimited capacity for organization to be in a good vision and face the new challenges.(Somyos Cheejaeng, 2009)

¹ Corresponding Author name. Supphakant Prasertatana Tel.: +0-000-000-0000
 E-mail address: tum2511@yahoo.com

Due to the situation nowadays, leadership paradigm needs to be adjusted in order to achieve new leadership idea focusing on leaders with broad vision, flexibility, especially on having morality to enhance and develop the leadership capability of the team and the leader himself, including teamwork issues. Therefore, it is widely believed that this is the perfect time for distributed leadership to be started. Among the rapid changes of the complex world at present, characters of distributed leadership are about common visions of teamwork culture, and leadership practice through all other followers to follow effectively. Hence, with the pattern of education changes in the globalization world and future trend, the idea of distributed leadership would be considered appropriate for school administrators in Thailand during this decades. (Suthep Pongsriwat, 2007) New leaders should distribute the power through their organizations and also leadership to others. (Spillane, 2006)

As mentioned above, the researcher is interested in studying the pattern of components of distributed leadership theory in form of structural equation model: SEM. By creating distributed leadership structural equation model of basic school administrators, the researcher could examine a causal relationship model created from the theory by collecting empirical data, then test the model goodness of fit in which the researcher would like to assure and test the developed theory.

2. Research Objectives

1. To examine the congruence of distributed leadership structural equation model of basic school principals depending upon empirical data.
2. To study the weight of direct, indirect, and total effect of causal factors on distributed leadership.

3. Methodology

This quantitative research study was conducted based on the population of 31,323 basic school principals during the academic year 2011. The Maximum Likelihood method (ML) was applied in sizing the samples using 20:1 ratio of sample unit and parameter. In this research, 42 parameters were based on and the number of 840 samples was derived by the multi-stage random sampling.

4. Research instrument

The research instrument was a 5-scale rate, classified according to the 3 variables of distributed leadership, namely collaboration, creativity and trust. The reliability level of the questionnaire was 0.98. The 840 forms of questionnaire were mailed to informants and 728 out of 840 samples were collected and it is considered as 86.67%.

5. Data analysis

LISREL statistics software was used for analyzing the data and evaluating the correlation coefficient between variables in factor analysis and path analysis equation model.

6. Conclusions

1. The examination of the distributed leadership structural equation model of basic school principals found that the model was congruent with the empirical data. After the modification of the distributed leadership structural equation model developed by the researcher, the result was congruent with the empirical data, by considering the statistics below; Chi-square value = 36.06, df = 47 p-value = 0.88, $\chi^2 = 0.78$, GFI = 0.99, AGFI = 0.98, GFI = 1.00, SRMR = 0.00, RMSEA = 0.00, CN = 1451.98, LSR/SSR = 1.71/1.91 as shown in figure 1.

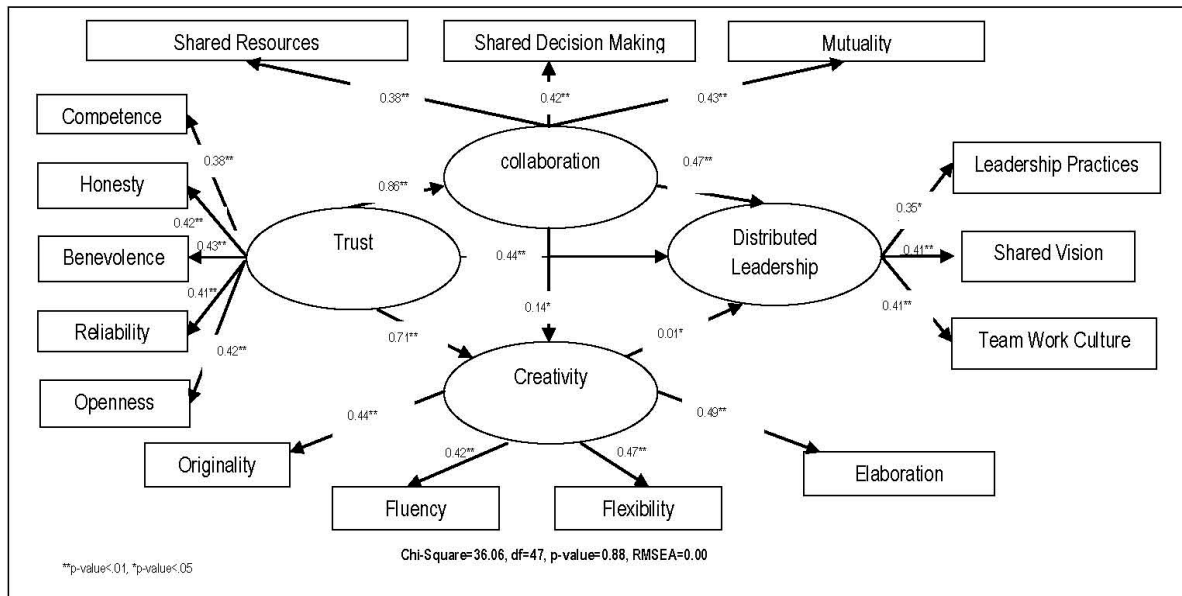


Figure 1. Distributed leadership structural equation model of basic school principals which conforms to the empirical data

2. By considering collaboration, creativity, and trust factors, the research result reflected in direct effect, indirect effect, and total effect of factors affecting distributed leadership of basic school principals as follows;

- 1) Direct effect: distributed leadership got positive total influences from trust, collaboration, and creativity factors resulting in influence coefficient of 0.44, 0.47, and 0.01 respectively.
- 2) Indirect effect: trust factor had an indirect influence positively on distributed leadership through collaboration factor resulting in influence coefficient of 0.41
- 3) Total effect: analyzed total influence coefficients of causal variables affecting to distributed leadership are shown in order as follows; total influence coefficients of trust, collaboration, and creativity factors are 0.85, 0.47, and 0.01 respectively. After considering correlation matrix between latent variables, it was found that correlation coefficient between latent variables result in values of 0.73-0.86, and each pair of variables had positive association. Collaboration and trust factors had correlation coefficients of 0.86 which were considered as the maximum ones.

7. Discussions and Recommendations

1. The Examination of Congruence of Distributed Leadership Structural Equation Model of Basic School Principals and Empirical Data

After the examination of congruence of distributed leadership structural equation model of basic school principals, the result showed that the developed structural equation model was congruent with the empirical data. By considering the following statistics; $\chi^2 = 36.06$, $df = 47$, $p\text{-value} = 0.88$, $\chi^2/df = 0.78$, $GFI = 0.99$, $AGFI = 0.98$, $CFI = 1.00$, $SRMR = 0.00$, $RMSEA = 0.00$, $CN = 1451.98$, $LSR/SSR = 1.71/-1.91$, all values passed the defined criteria.

The reasons why the examination of distributed leadership structural equation model is congruent with the empirical data are; firstly the model had been developed from theory and research work in which the research tool had content validity checked from principle component, element, operational definition, and indicator synthesis. Moreover, the created questionnaires obtained from this model were examined by experts, and the modified questionnaires used to test with research samples which were not used in real data collection, resulted in high reliability, this might be one reason to support that the developed distributed leadership structural equation model was congruent with the empirical data, secondly, basic school principals, in this case, as research samples brought about some events for instance, recent educational management development emphasizes on power distribution to educational region and schools. Schools also have important role to distribute power to teachers as well. Moreover, nowadays administrator development emphasizes on transforming paradigm of centralized management to distributed management, and school administrators of primary and secondary levels were developed by the whole system leading to the congruence of model with the empirical data. On one hand, the developed model from theory and research work was congruent with distributed leadership expression of basic school principals.

2. Direct Effect, Indirect Effect, and Total Effect of Factors regarding the Study of Distributed Leadership of Basic School Principals

According to the result, considering the 3 factors; trust factor, and collaboration factor, direct effect, indirect effect, and total effect had positive influence on distributed leadership resulting in statistical significance of .01, .01 respectively. Creativity had positive influence on distributed leadership resulting in none of statistical significance. Trust factor had positive influence on creativity factor resulting in statistical significance of .01. After considering direct effect:DE, indirect effect:IE, and total effect:TE between each latent variables, it was found that each variable affected in both direct and indirect effect to each other. According to the result of the research, 3 factors affected positively to distributed leadership and trust factor had a highest value of total effect.

The result showed that trust factor had a direct effect in a positive way, and a total effect on distributed leadership resulting in total effect of 0.85 and statistical significance of .01. From the result, it would say that trust is behaviour in which all basic school principals may have and it is an important behaviour for administrators, this is due to the fact that trust and building trust are the way to build trust and faith for personnel in guiding an organization to succeed, correspondent to Luhmann(1979)'s point of view stating that trust is compared as bolts that connect all components together and provide success for an organization. Organization without trust from its personnel would lose time and resource for management. Trust is an important component in all types of relationship resulting in peacefulness and values in all methods of exchanging. Trust would cause relying on, counting on, and believing in within an organization. In the past decades, the topic of trust has increased its importance more and more. Besides, collaboration factor had a direct effect in a positive way, and a total effect on distributed leadership resulting in total effect of 0.47 and statistical significance of .01. From the findings, collaboration is an important factor for distributed leadership of basic school principals, and being cooperated from others would lead to effective management, good quality of service, fast operation, having trust, faith and sacrifice in teaching.

According to the result, creativity factor had positive influence on distributed leadership resulting in none of statistical significance, and total effect of 0.01. Creativity is one character which could be found hardly in basic school principals, but it could happen with everybody, and be developed continuously without interrupting. According to Kouzes and Posner (2007)'s point of view, all leaders try to search for methods of bringing organizations to reach expected target, therefore they need to be pioneers for creative thinking initiation, and willing to step to new places where the leaders realize all possible risks which may arise by development and examination for finding new ways and thoughts. According to the idea of Kriengsak Chareonwongsak (2004), creativity leads to ceaseless innovation, and better outcome, therefore creative thinking development is an important issue for all

administrators, because it would help to achieve new chances, possibilities, innovations, and successes. New age school administrators should be the ones who initiate new things, and educational innovations.

8. References

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